

EXHIBIT 7.0R

REBUTTAL TESTIMONY

OF

PAULINE AHERN

CONSUMERS ILLINOIS WATER COMPANY

DOCKET NOS. 00-0337, 00-0338, 00-0339

Consolidated

September 29, 2000

CONSUMERS ILLINOIS WATER COMPANY

**ILLINOIS COMMERCE COMMISSION
DOCKET NOS 00-0337, 00-0338 AND 00-0339.
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OF
PAULINE M. AHERN**

I. INTRODUCTION

Q. Please state your name, occupation and business address.

A. My Name is Pauline M. Ahern and I am a Vice President of AUS Consultants – Utility Services. My business address is 155 Gaither Drive, P. O. Box 1050, Moorestown, New Jersey 08057.

Q. Are you the same Pauline M. Ahern who previously submitted prepared direct testimony in this proceeding?

A. Yes, I am.

Q. Have you prepared an exhibit which supports your rebuttal testimony?

A. Yes, I have. It has been marked for identification as Exhibit No. 7.0R and consists of 10 schedules.

II. PURPOSE

Q. What is the purpose of this testimony?

A. The purpose of this testimony is to rebut certain aspects of the testimony of Michael McNally, Staff Witness for the Illinois Commerce Commission (ICC) concerning common equity cost rate. Specifically, I will address Mr. McNally's exclusive reliance upon the Discounted Cash Flow (DCF) Model, the inadequacy of his recommended overall rate of return, including common equity cost rate, as well as respond to his comments on my direct testimony.

III. TESTIMONY OF ICC STAFF WITNESS MICHAEL McNALLY

A. Cost of Common Equity

1. Exclusive Reliance Upon DCF

Q. **Mr. McNally's range of recommended common equity cost rate of 9.90% - 10.40% is based exclusively upon the DCF model. Please comment.**

A. Although Mr. McNally also employs a Risk Premium analysis, which is really a CAPM analysis, it is dependent upon the DCF model. On page 20, at lines 384 - 386 of ICC Staff Exhibit 7, Mr. McNally indicates that the expected rate of return on the market upon which he based the equity risk premium, used in his CAPM analysis, was estimated by utilizing a DCF analysis of the companies comprising the Standard & Poor's (S&P) 500 Index.

The DCF Model is market-based as current market prices are employed in its application. Therefore, it is based upon the Efficient Market Hypothesis (EMH) which is the foundation of modern investment theory. The EMH, which is discussed in detail in CIWC Exhibit No. 7, means that investors are aware of all publicly-available information, including bond ratings; discussions about companies by bond rating agencies and investment analysts as well as the various cost of common equity methodologies (models) discussed in the financial literature. This means that no single common equity cost rate model should be relied upon in determining a cost rate of common equity and that the results of multiple independently derived cost of common equity models should be taken into account.

In view of the foregoing, it is clear that Mr. McNally, because his CAPM analysis is dependent upon a DCF analysis, relied exclusively upon the DCF in arriving at his recommended range of common equity cost rate for CIWC. Therefore, Mr. McNally's exclusive reliance upon the DCF model is at odds with the very foundation, i.e., the EMH, upon which the DCF is predicated.

2. Discounted Cash Flow

Q. On page 10, at lines 195 - 198 of ICC Staff Exhibit 7, Mr. McNally states that “A comprehensive analysis of a utility’s operating and financial risks becomes unnecessary in DCF analysis since the market price of a utility’s stock already embodies the market consensus of those risks.” Please comment.

A. This statement is true to the extent that the cost rate of common equity derived from a DCF analysis will be used in determining the investor required rate of return for the utility whose market prices and growth rate(s) are used for the DCF analysis. However, rates set in the instant proceeding will be applied to the jurisdictional rate base of Consumers Illinois Water Company (CIWC) and not the company or companies in either my proxy groups or Mr. McNally’s sample groups. Therefore, a comprehensive analysis of CIWC’s risks vis-a-vis the companies upon whose market data both I and Mr. McNally rely is mandatory in order to assess the applicability of any cost rate(s) of common equity derived from such data to CIWC’s rate base and whether any relative risk adjustment is warranted.

Q. Please comment upon Mr. McNally’s use of spot market prices in his DCF analysis.

A. Although DCF theory indicates that the appropriate stock market price to use in a DCF analysis is the spot market price, the use of average stock prices over the recent past normalizes the effect of any market aberrations or volatility. It also normalizes the effects of dramatic company-specific events upon stock price, such as unmet earnings expectations, merger / acquisition rumors, acts of God in the company’s service territory, litigation, etc.

The components of the revenue requirement in utility ratemaking are based upon normal operations. Therefore, attempts are made to estimate the Company’s normal expenses / costs, including its capital costs. For example, typically, embedded fixed capital costs, e.g., yields to maturity, are used to estimate the cost of fixed capital over the

life of the capital. Likewise, common equity cost rates applied to the common equity portion of the utility's rate base must reflect the normal operations of the utility and not be affected by temporary market aberrations affecting the market prices of the companies used as proxies for the regulated utility. This is especially true in today's capital market environment when the water companies used as proxies for a regulated water utility, such as CIWC, are large, geographically diverse holding companies comprised of a portfolio of assets. Moreover, recent merger / acquisition activity has affected the common stock prices of all water utilities; the acquiring companies, those acquired, as well as the rest, which are all in play in today's merger / acquisition market. Hence, the use of spot prices, while reflecting the "market's assessment of the common stock's current value" does not accurately reflect the cost rate of common equity of the operating, regulated water utility on an ongoing, continuing basis.

3. Risk Premium Analysis, i.e., Capital Asset Pricing Model

Q. Please comment upon Mr. McNally's risk premium analysis.

A. As previously discussed, Mr. McNally's risk premium analysis is a traditional CAPM analysis. Moreover, it is understated because he developed the market equity risk premium based upon a market return developed using a DCF analysis.

As discussed in CIWC Exhibit No. 7, my direct testimony, at page 17, line 21 through page 27, line 2, I discuss the tendency of the DCF model to mis-specify investors' required return rate when the market value of common stock differs significantly from its book value. Mathematically, the DCF model understates investors' required return rate when market value exceeds book value because, market prices reflect investors' assessments of long-range market price growth potentials which are not reflected in the growth rate proxies, such as I/B/E/S projected earnings per share (EPS) growth rate estimates. The market-to-book ratio of the S&P 500 Index (S&P 500) was 496.4% at year end 1999, the most recently available date, which was significantly

greater than unity. Clearly, then, a DCF-derived total market return grossly understates the true investors' required return rate for the S&P 500 and hence, understates both the equity risk premium used by Mr. McNally in his CAPM as well as his resultant CAPM derived common equity cost rates of 10.19% and 10.50%

Q. Mr. McNally calculates his own beta estimates for the companies in both his water sample and his comparable sample. Please comment.

A. Rate of return analysts, such as myself and Mr. McNally, should attempt to emulate investor behavior to the greatest extent possible in our rate of return analyses because we are attempting to estimate the investors' required return on common equity. It is not necessary to independently calculate betas, as they are widely available and relatively inexpensive, from sources such as Value Line Investment Survey (Value Line) and Merrill Lynch, to both rate of return analysts and the investors whose behavior the analysts such as Mr. McNally and I should be attempting to emulate.

Moreover, the methodology Mr. McNally utilizes to calculate his betas is inconsistent with the methodology used by Value Line and Merrill Lynch. On page 21 of ICC Staff Exhibit 7.0R, Mr. McNally states that he calculated his betas by regressing the excess returns (stock market returns less U. S. Treasury bill returns) of the companies in each of his two samples against the excess returns of the S&P 500 to estimate raw betas. Next, he adjusted these raw betas in a manner similar to the methodology Value Line uses to adjust their betas.

Schedule 1 of Exhibit No. 7.0R accompanying this testimony contains Value Line's description of its beta calculation and subsequent adjustment. As indicated in Schedule 1, Value Line calculates its betas from least-squares regression analyses "between weekly percent changes in the price of a stock and weekly percent changes in the New York Stock Exchange Composite Index over a period of five years." Value Line does not calculate its betas from excess returns. Similarly, Merrill Lynch calculates its

betas using a standard regression of the monthly price returns of individual stocks and the monthly price returns on the S&P 500 Index and not excess returns as indicated in Schedule 2 of Exhibit No. 7.0R

In view of the foregoing, namely the wide and inexpensive availability of published betas, it is completely unnecessary for Mr. McNally to calculate his own betas, especially using a methodology which differs from that used by Value Line and Merrill Lynch, both of which are investor influencing.

Q. On page 22 of ICC Staff Exhibit 7.0R, lines 416 - 430, Mr. McNally discusses his reasons for adjusting betas. Please comment.

A. Specifically, Mr. McNally states at lines 423 - 425, that “[a] the raw beta estimate towards the market mean value of 1.0 compensates for the observed flatness in the linear relationship between risk and return.” He then cites pp. 375-376 of an article by Litzenberger, Ramaswamy and Sosin in support for this assertion. Schedule 3 of Exhibit No. 7.0R accompanying this testimony is a copy of that article: “On the CAPM Approach to the Estimation of A Public Utilities' Cost of Equity Capital,” Litzenberger, Ramaswamy and Sosin, *Journal of Finance*, May 1980 pp. 369-383. Page 375, of Litzenberger, et al., contains Blume’s observation “that historical betas which are adjusted towards unity are better predictors of future betas . . . than are unadjusted betas.”¹ Nowhere on pp. 375-376 do the authors mention or discuss the “observed flatness in the linear relationship between risk and return.” Rather, the Empirical CAPM (ECAPM), which will be discussed subsequently, corrects for the “observed flatness in the linear relationship between risk and return.” My colleague, Frank J. Hanley, President, AUS Consultants – Utility Services, has been in communication with Dr. Roger A. Morin, author of Regulatory Finance – Utilities’ Cost of Capital and Professor

of Finance at the J. Mack Robinson College of Business and Distinguished Professor of Finance for Regulated Industry at the Center for the Study of Regulated Industry at Georgia State University. Schedule 4 of Exhibit No. 7.0R accompanying this testimony is a copy of recent e-mail correspondence between Mr. Hanley and Dr. Morin. Dr. Morin's response to Mr. Hanley makes it very clear that the ECAPM is quite separate from the beta adjustment for regression bias, i.e., the tendency of raw betas to move toward unity.

In view of the foregoing, although Mr. McNally correctly, and commendably, adjusted his calculated raw betas, he did so for the wrong reason.

4. Mr. McNally's Recommended Range of Common Equity Cost Rate

Q. Please discuss Mr. McNally's recommended range of common equity cost rate of 9.90% - 10.40%.

A. Mr. McNally's range of recommended common equity cost rate of 9.90% - 10.40% is inadequate for three reasons. First, such a range provides an insufficient risk premium over and above the cost of public utility debt. Second, such a range does not reflect the additional risk experienced by CIWC due to its small size vis-à-vis the companies in his water and comparable samples. Third, such a range does not provide CIWC with an adequate opportunity for pretax interest coverage in order to maintain its credit quality and ability to attract capital on reasonable terms in competition with other firms of similar risk.

Q. How does a range of common equity cost rate of 9.90% to 10.40% compare with utility debt costs?

A. Moody's A rated public utility bonds were currently yielding 8.34%, as of September 15, 2000. This implies an equity risk premium of between 1.56% and 2.06% relative to Mr.

¹ "On the CAPM Approach to the Estimation of A public Utilities' Cost of Equity Capital," Litzenberger, Ramaswamy and Sosin, *Journal of Finance*, May 1980 pp. 369-383. On

McNally's range of recommended common equity cost rate. Given that Mr. McNally acknowledges that A rated public utility bonds are "less risky", (line 453 of page 23 of ICC Staff Exhibit 7.0R) than CIWC, presumably a comparison of his range of recommended common equity cost rate with Moody's Baa rated public utility bond yields is also appropriate. On September 15, 2000, Moody's Baa rated public utility bonds were yielding 8.41%, implying a range of equity risk premium of 1.49% to 1.99%.

In addition, relative to Mr. McNally's recommended long-term debt cost rate for CIWC, his range of recommended common equity cost rate provides an equity risk premium of but 1.42% to 1.92%.

In contrast, Mr. McNally's own beta adjusted risk-premium applicable to his water sample is 4.69% (Schedule 7.09, ICC Staff Exhibit 7.0R). In addition, my RPM analysis indicates that an appropriate risk premium for A rated public utility bonds is in the range of 4.6% (based upon a study of the holding period returns of A rated public utilities) to 4.8% (based upon the total market using the beta approach and applicable to A rated water companies) (page 5 of Schedule 15, CIWC Exhibit No. 7). Equity risk premiums on the order of 1.42% to 2.06% are clearly inconsistent and inadequate compared with both Mr. McNally's own calculated equity risk premium as well as those developed in my RPM analysis.

In view of the foregoing, and given that Mr. McNally's recommended range of common equity cost rate provides an inadequate equity risk premium for CIWC, Mr. McNally's recommendation should be rejected.

Q. Mr. McNally's recommended range of common equity cost rate does not reflect an upward adjustment to reflect CIWC's additional risk. Please comment.

A. As stated above, even Mr. McNally acknowledges that CIWC is more risky than A rated public utilities, such as his water and comparable groups. Yet, he has made no upward

adjustment to his range of recommended common equity cost rate to reflect such risk. He states on page 25, lines 473 - 476, that his “analysis of the risk of CIWC as compared to that of my two proxy samples, represented by his “four factor scores, indicates that the risk of CIWC is equal to, or slightly less than, the risk of both the comparable sample and the water sample.” Yet, Mr. McNally has neither identified the four factors resulting from his principle components analysis nor discussed the relevance of the resulting factor coefficients shown on Schedule 7.04 of ICC Staff Exhibit 7.0R. Mr. McNally has provided no theoretical, empirical or statistical support that the coefficients of the unidentified factors for CIWC indicate that CIWC’s risk is “equal to or slightly less than, the risk of both the comparable sample and the water sample.”

In addition, Mr. McNally is inconsistent when he asserts that companies with A rated bonds are less risky than CIWC and the implication later in his testimony implies that CIWC’s investment risk is similar to that of Philadelphia Suburban Water Company (PSC) whose bonds are rated AA- by S&P. Since companies with A rated bonds are more risky than companies with AA rated bonds, it is only logical that CIWC, based upon Mr. McNally's testimony and his implicit acknowledgement that CIWC is more risky than companies with A rated bonds, is considerably more risky than PSC, whose bonds are rated AA-.

Moreover, Mr. McNally has not reflected the additional risk of CIWC due to its small size vis-à-vis the companies in his sample groups. Because CIWC is the regulated utility against whose rate base the Commission's ultimately allowed overall cost of capital and fair rate of return will be applied, the relevant risk reflected in the cost of capital must be that of CIWC, including the impact of its small size on common equity cost rate. As discussed in CIWC Exhibit No. 7, my direct testimony, at page 11, lines 7 - 16, size is an important factor which affects common equity cost rate, an observable phenomenon widely discussed in the financial literature. The Company is significantly

smaller than the average company in either of Mr. McNally's sample groups based upon total investor-provided capital or market capitalization as shown below:

Table 3

	<u>1999 Total Capital</u> (\$ millions)	<u>Times Greater than The Company</u>	<u>Market Capitalization</u> (\$ Millions)	<u>Times Greater than the Company</u>
Mr. McNally's Water Utility Sample	\$ 867.029 (1)	10.6x	\$570.029 (1)	7.3x
Mr. McNally's Comparable Sample	\$3,349.694 (1)	40.8x	\$2,086.997 (1)	26.7x
Consumers Illinois Water Company	\$82.145 (1)		\$78.183 (1)	

(1) From Schedule 5, Exhibit No. 7.0R.

I have also made a study of the relative market capitalization of CIWC vis-a-vis the companies in Mr. McNally's two sample groups. The results are shown on Schedule 5 of Exhibit No. 7.0R. Schedule 5 contains a summary of the market capitalizations as of June 30, 2000.

CIWC's common stock is not publicly traded. Consequently, I have assumed that if it were publicly traded, its consolidated common shares would have sold at the same market-to-book ratio as the current average market-to-book ratio for Mr. McNally's water utility sample, or 186.8% at August 9, 2000. Hence, the company's market capitalization is estimated to be \$78.183 million as of August 9, 2000. In contrast, the market capitalization of the average sample water utility was \$570.271 million on August 9, 2000, or approximately 7.3 times larger than the Company's estimated market capitalization. And, the market capitalization of the average comparable sample company was \$2,086.997 million on August 9, 2000, or approximately 26.7 times larger than CIWC's estimated market capitalization. It is conventional wisdom, supported by actual returns over time, and a general premise contained in basic finance textbooks, that

smaller companies tend to be more risky causing investors to expect greater returns as compensation for that risk.

As noted in CIWC Exhibit No. 7.0R, my direct testimony, at page 12, lines 3 - 22, the financial literature affirms a relationship between size and common equity cost rate. Mr. McNally, himself, acknowledges the factors which relate to both size and return on page 46 of ICC Staff Exhibit 7.0R when he discusses the liquidity of small firms and increased information costs. However, his discussion on page 46 has the proverbial cart before the horse. It is precisely because of the size of smaller companies that their securities are relatively “less liquid than those of larger companies since the potential breadth of the market for the former is usually more limited.” (ICC Staff Exhibit 7.0R, p. 46, lines 898 –900). On page 46, Mr. McNally also discusses the increased information, i.e., transaction, costs associated with small companies. Hence, without accepting that a size premium exists, he acknowledges the very factors which illustrate the existence of such a premium.

Q. You previously stated that Mr. McNally’s recommended range of common equity cost rate of 9.90% to 10.40% does not provide CIWC with an adequate opportunity for pretax interest coverage. Please explain.

A. Mr. McNally’s range of recommended common equity cost rate results in a range of after-income tax overall rate of return of 9.14% to 9.39%. Using a company provided combined effective statutory federal and state income tax rate of 39.67% (from page 1 of Schedule 1, CIWC Exhibit No. 7), a before-income tax overall rate of return of 12.40% to 12.81% can be derived. This results in the opportunity for pretax interest coverage of 2.95 – 3.04 times. An opportunity for pretax interest coverage of 2.95 – 3.04 times is substandard compared with S&P’s financial target pretax interest coverage ratios for utilities whose bonds are rated A and are assigned a business position of “3”, such as the companies in my proxy group of six water companies. S&P requires an achieved range

pretax interest coverage of 2.8 - 3.4 times for utilities which are assigned a business position of “3”, such as the companies in my proxy group of six water companies, to obtain and maintain an A bond rating. As discussed in CIWC Exhibit No. 7, at page 50, lines 23 - 25, if the Company’s long-term debt were rated and a business position assigned by S&P, it would likely have a debt rating in the A category and a business position of “4”. In order for utilities with a business position of “4” to obtain and maintain an A bond rating, S&P requires a range of achieved pretax of 3.3 – 4.0 times. Clearly, the opportunity for pretax coverage of but 2.95 – 3.04 times implicit in Mr. McNally’s recommended overall rate of return is an inadequate opportunity for CIWC and is substandard relative to S&P’s financial target ratios. In contrast, implicit in CIWC’s requested overall rate of return of 9.76% is an opportunity for pretax interest coverage of 3.26 times. Pretax interest coverage of 3.26 times falls near the middle of the range of pretax interest coverage of 2.8 to 3.4 times required by S&P for a utility with a business position of “3” to obtain and maintain an A bond rating. And, pretax interest coverage of 3.26 times falls just below the bottom of the range of 3.3 – 4.0 times required by S&P for a utility with a business position “4”, which is likely for CIWC, to obtain and maintain an A bond rating.

In view of the foregoing, namely, that Mr. McNally’s recommended range of common equity cost rate provides an inadequate opportunity for pretax interest coverage, Mr. McNally’s recommendation should be rejected and the Company’s requested overall rate of return, which provides a reasonable, if not conservative, opportunity for pretax interest coverage should be adopted by this Commission in the instant docket.

I

RESPONDING TO COMMENTS ON COMPANY TESTIMONY

A. Use of Historical Data

Q. On page 26, line 505 through page 29, line 564 of ICC Staff Exhibit 7.0R, Mr. McNally comments upon your use of historical data in the your application of the DCF, RP, CAPM and Comparable Earnings Model (CEM). Please comment.

A. As stated previously, rate of return analysts, such as myself and Mr. McNally, are attempting to emulate investor behavior. Absent empirical evidence to the contrary, it is reasonable to assume that investors utilize historical data in arriving at their expectations and required returns. Such data, i.e., historical, are presented by companies in their financial reports to shareholders, on their internet homepages and required by the Securities and Exchange Commission (SEC). Historical data are also provided by major, investor influencing publications and agencies such as Value Line Investment Survey, Standard & Poor's, Ibbotson Assoc., the U. S. Treasury Department, etc. Moreover, historical data are the bases for I/B/E/S forecasts, which are based upon growth from the most recent fiscal year end. Consistent with the EMH as discussed earlier, investors are aware of all information, historical and projected, which is available to them. Therefore, absent evidence to the contrary, it is reasonable to evaluate historical data in a rate of return analysis particularly for water companies, because the water industry is not experiencing the dramatic changes attributable to deregulation and restructuring that are occurring in the energy, i.e., electric and natural gas, industries. Under those circumstances historical data have less significance. Such is not the case for the water utility industry.

Q. Do you agree with Mr. McNally's statement on page 26, line 507 through page 27, line 508 that "[h]istorical data reflects [sic] conditions that may not continue in the future?"

1 A. No. The use of the words “may not” implies the converse as well – namely that historical
2 data reflect conditions that may continue in the future. Moreover, as discussed in my
3 direct testimony, CIWC Exhibit No. 7, at page 34 line 16 through page 28, line 35,
4 Ibbotson Associates indicate that while past actual events are not likely to be repeated in
5 the future, the event-types of a period can be expected to recur. Schedule 6 of Exhibit
6 No. 7 accompanying this testimony is an excerpt from Ibbotson Associates’ Stocks,
7 Bonds, Bills and Inflation: Valuation Edition 2000 Yearbook. On page 66 of the
8 Valuation Edition 2000 Yearbook, Ibbotson Assoc. state the following regarding the use
9 of historical data in evaluating investors’ return expectations:

10 “Finally, Because historical event-types (not specific events) tend to repeat
11 themselves, long-run capital market return studies can reveal a great deal about
12 the future. Investors probably expect “unusual” events to occur from time to
13 time, and their return expectations reflect this.”² (emphasis added)
14

15 Mr. McNally is also incorrect when he states that the use of “average historical data
16 wrongly implies that securities data will revert to a mean.” He is correct when he states
17 that security return movements approximate a random walk, - with no mean reversion.
18 But as Ibbotson Associates studies of long-term historical market returns and equity risk
19 premia indicate that both are randomly generated³. However, statistically speaking, the
20 average, specifically the arithmetic mean, is the best estimate of the next expected value
21 of randomly generated data – such as market returns and equity risk premia. Ibbotson
22 Associates state:⁴

23 “The best estimate of the expected value of a variable that has behaved randomly
24 in the past is the average (or arithmetic mean) of its past values.”
25

26 Hence, use of average, specifically the arithmetic mean, historical data does not imply
27 mean reversion, rather it is the best estimate of the next expected value of the data in

² Ibbotson Associates, Stocks, Bonds, Bills and Inflation: Valuation Edition 2000
Yearbook, Chicago, IL, 2000, p. 66.

³ Id., p. 64.

⁴ Id., p. 64.

1 question. In other words, using the arithmetic mean of randomly generated data, such as
2 long-term historical stock market returns or equity risk premia, is forward looking,
3 expectational and entirely appropriate for a cost of capital determination.

4 **Q. Please comment upon Mr. McNally's citation from Burton G. Malkiel's book A**
5 **Random Walk Down Wall Street.**

6 A. Mr. McNally has taken the referenced sentence out of context. The quotation by Malkiel
7 found on page 27, line 512 of ICC Staff Exhibit 7.0R in its full context is as follows:

8 "A random walk is one in which future steps or directions cannot be predicted on
9 the basis of past actions. When the term is applied to the stock market, it means
10 that short-run changes in stock prices cannot be predicted."⁵ (emphasis added)
11

12 Short-run changes in stock prices are not what rate of return analysts such as
13 myself and Mr. McNally are attempting to derive in our analyses of the cost of common
14 equity. We are trying to emulate investor behavior, using data available to us and to
15 investors, in an attempt to arrive at an expert opinion of long-run investor expectations,
16 which are not directly observable or measurable. In doing so, we use proxies for investor
17 growth rate expectation information such as I/B/E/S forecasted EPS growth rates. As
18 discussed above, the arithmetic mean long-term historical equity risk premia, statistically
19 speaking, is the best estimate of the next expected equity risk premium.

20 **B. Discounted Cash Flow Model**

21 **Q. Please discuss Mr. McNally's comments on your use of historical data in your DCF**
22 **analysis.**

23 A. As previously discussed, although DCF theory indicates that spot market prices be used
24 in a DCF analysis, the use of average stock prices of a recent period normalizes the
25 effects of market aberrations, volatility and dramatic company-specific events upon stock

⁵ Burton G. Malkiel, A Random Walk Down Wall Street, W. W. Norton & Company, 1990, p. 24.

1 prices. Furthermore, the use of historical stock prices in a DCF analysis is consistent
2 with the normalization principle of ratemaking.

3

4 **Q. Please discuss Mr. McNally's comments on the growth component you utilized in**
5 **your DCF analysis.**

6 A. Again, as stated previously, absent evidence to the contrary, it is my opinion that,
7 consistent with the EMH upon which the DCF is predicated, investors avail themselves of
8 both historical, as well as projected, growth rate data, particularly for water utilities.

9 As for missing data (page 30, line 581 – page 31, line 600), namely, Value Line
10 forecasted growth in dividends per share (DPS) and EPS, in effect, I have assumed that
11 the missing growth rates are equal to the averages for each group. Such an assumption is
12 reasonable given that the companies in each group were selected upon the basis of similar
13 risk – to CIWC and to each other. Moreover, there is no evidence that the missing
14 growth rates, if available, would result in a lower upper end of the range growth rate
15 conclusion. In fact, for the majority of companies in both proxy groups for whom Value
16 Line projected growth in EPS are available, the Value Line growth rates are higher than
17 the I/B/E/S growth rates. And given, Mr. McNally's comment that smaller companies
18 “tend to have greater growth potential” (page 33, ICC Staff Exhibit 7.0R, line 649), it is
19 entirely possible that the “upper end estimates of the growth rate ranges” may, in fact, be
20 understated. However, in the absence of missing Value Line projected growth rate data,
21 no real conclusions can be drawn regarding what the growth rates would be if data were
22 available for all companies. Therefore, given that the companies were selected based
23 upon similar risk, it is reasonable to assume that investors would assume the missing
24 growth rates to be equal to the average growth rates of the companies for whom data are
25 available.

1 **Q. On page 31, line 601 through page 32, line 612, Mr. McNally claims that you**
2 **“incorrectly substitute[s] the average return on all equity investment for “R” ,**
3 **which is defined as the return on future investment only.” Please comment.**

4 A. This is incorrect, insofar, as the retention growth method (BR + SV) is applied in utility
5 ratemaking. Both Roger A. Morin in Regulatory Finance - Utilities Cost of Capital and
6 David C. Parcell, an expert rate of return witness, in The Cost of Capital – A
7 Practitioner’s Guide (the study manual prepared for the Certified Rate of Return Analysts
8 program of the Society of Utility and regulatory Financial Analysts (SURFA)), indicate
9 that the “R” component of the BR + SV growth method is defined as the return on book
10 common equity – all common equity not just future investment, which may be financed
11 with either debt, common stock or a combination of both.

12 To reiterate, what rate of return analysts attempt to do is to emulate investor
13 behavior. Absent evidence to the contrary and given the availability of historical data, it
14 is reasonable that investors avail themselves of all such data, consistent with the EMH
15 upon which market-based cost of common equity models, such as the DCF, RPM, CAPM
16 and CEM are based. In the final analysis, one must look at the end result and judge it
17 upon the basis of common sense and whether or not it is a reasonable approximation of
18 investor behavior, which is influenced by, among other things, the financial literature.

19 **C. Capital Asset Pricing Model**

20 **Q. Mr. McNally, at page 32, line 617 - 618 of ICC Staff Exhibit 7.0R, criticizes your use**
21 **of Ibbotson historical data in your derivation of the total market return component**
22 **of your CAPM analysis. Please comment.**

23 A. Mr. McNally is indeed correct when he states, at page 32, lines 616 to 618 of ICC Staff
24 Exhibit 7.0R, that one estimate of total market return which I utilize is the arithmetic
25 mean of the long-term historical equity total earned return rates on common stocks of
26 13.3%. As discussed previously, this is entirely appropriate for cost of capital purposes as

1 the arithmetic mean return is the best estimate of the next expected value for the total
2 return on common stocks. Furthermore, as discussed in CIWC Exhibit No. 7, at page 35,
3 line 35 through page 36, line 17, use of the arithmetic mean provides insight into the
4 variance and standard deviations of returns. This is particularly important as ex-post
5 (historical) total returns and equity risk premia differ in size and direction over time.
6 Absent the valuable insight of the prospect for variance, and hence, risk, provided by the
7 arithmetic mean, investors cannot meaningfully evaluate prospective risk. Thus, the use
8 of long-term historical data to develop an expectation of the future long-term average
9 total market return and resultant equity risk premium is entirely appropriate for use in the
10 CAPM.

11 **Q. Mr. McNally is also critical of your use of Value Line projected median total market**
12 **appreciation and median projected dividend yields in your derivation of the total**
13 **market return component of your CAPM analysis, at page 32, line 618 through page**
14 **33, line 662 of ICC Staff Exhibit 7.0R. Please comment.**

15 A. When evaluating Value Line information, one must remember that Value Line, with over
16 100,000 subscribers and its wide availability in most public libraries, is, hence, investor
17 influencing. To reiterate, rate of return analysts, such as Mr. McNally and myself, should
18 be attempting to emulate investor behavior. Consistent with the EMH, investors can
19 readily and inexpensively avail themselves of Value Line information. This is especially
20 true for water utilities whose common stocks on average are 78.5% owned by individuals
21 (see Schedule 13, CIWC Exhibit No. 7). Therefore, it must be concluded that the
22 information provided by Value Line is investor influencing and should not be rejected by
23 any rate of return analyst.

24 That having been said, Mr. McNally's criticism of my use of Value Line's
25 median 3-5 year price appreciation of all 1700 stocks covered in Value Line's Standard
26 Edition is moot. It is true that the median does not weigh the "relative value of the

1 securities composing the market portfolio.” Because it does not, it provides a better
2 estimate of the central tendency of the securities in that portfolio. In other words, use of
3 the median compensates for the effect that extremely high or low expected price
4 appreciation and number of shares outstanding have on either the simple or weighted
5 arithmetic mean. The median is that value of a data series or distribution such that half of
6 the observations are larger, and half are smaller, so that there is an equal number of
7 observations on either side of the median. As such, the median is not influenced by
8 extremely high or low observations.

9 In addition, Mr. McNally makes the unsupported comment that “the median
10 growth estimate does not afford higher weights to large companies, and thus over weights
11 the contributions of smaller companies, which tend to have greater growth potential.”
12 Such a comment is not supported by a showing that indeed, the smaller companies in the
13 universe of Value Line’s 1700 stocks do have higher price appreciation potential than the
14 smaller companies. Without knowing the price appreciation potential of each and every
15 stock, large and small, in Value Line’s 1700 stock universe, no meaningful conclusion
16 can be drawn as to whether the median price appreciation is higher or lower than a simple
17 or weighted arithmetic mean. Mr. McNally has provided no information to support his
18 conclusion.

19 The same response is appropriate regarding Mr. McNally’s comments on the
20 median expected dividend yield of all dividend paying stocks provided by Value Line.
21 Without knowing precisely each and every dividend yield for all 1700 hundred stocks
22 covered by Value Line in its Standard Edition, the conclusion that the median overstates
23 the average, or mean, dividend yield can not be drawn. Again, the median is that value of
24 a data series where half the observations are higher and half are lower. It is entirely,
25 conceivable that there are a sufficient number of stocks yielding the median dividend

1 yield that by adding those non-dividend paying stocks to the data series, the median
2 would still be the same.

3 Again, what we, as rate of return analysts must be attempting to do is to emulate
4 investor behavior. Investors have the Value Line median price appreciation potential,
5 widely and inexpensively available to them. The EMH compels us to believe that
6 investors utilize such information in forming their expectations.

7 **D. Empirical Capital Asset Pricing Model**

8 **Q. On page 34, line 664 through page 37, line 711 of ICC Staff Exhibit 7.0R, Mr.**
9 **McNally describes “errors” in your ECAPM. Please comment.**

10 A. Mr. McNally is indeed correct when he states that “[q]uantitative research suggests the
11 relationship between risk and return is flatter than the CAPM predicts.” However, he is
12 incorrect when he states that Litzenberger et al. adopt “raw beta as the measure of risk in
13 its tests of the relationship between risk and realized returns” (page 35, lines 675 – 676
14 and 679 – 682) and “suggest that globally adjusted betas, such as those which Value Line
15 publishes, are a solution to the discrepancy between the theoretically predicted and
16 empirically observed relationship between risk and return.” Litzenberger, et al. used both
17 adjusted and unadjusted betas in their study, as is clear from Schedule 3 of Exhibit No. 7
18 accompanying this testimony, a copy of the article by Litzenberger, et al. Moreover, their
19 conclusion was that for utilities with a beta less than one and with lower than average
20 residual risk, i.e., non-diversifiable risk, cost of capital estimates using Bayesian or
21 statistically adjusted betas and a linear relationship, i.e., traditional CAPM between risk
22 premia and betas “would be lower than that obtained using a linear relationship estimated
23 with unadjusted or globally adjusted betas.”⁶ (Note that Value Line betas are globally
24 adjusted betas.) In addition, they conclude by stating that these results “indicate the

⁶ Id., p. 382.

1 importance of further research on the revision of betas towards unity.⁷ They do not state
2 that globally adjusted betas, such as Value Line's, "are a solution to the discrepancy
3 between the theoretically predicted and empirically observed relationship between risk
4 and return."

5 **Q. Please comment upon Mr. McNally's assertion that by using adjusted betas in your**
6 **ECAPM, you have "already effectively transformed" your CAPM into an empirical**
7 **CAPM. (page 35, lines 682 –684 of ICC Staff Exhibit 7.0R).**

8 A. As previously discussed, my colleague, Mr. Hanley has been in communication with Dr.
9 Morin. As their e-mail correspondence (Schedule 4 of Exhibit No. 7) indicates the
10 ECAPM compensates for CAPM's inherent bias by ascribing a higher intercept and
11 flatter slope to CAPM. It is not an attempt to increase beta. Dr. Morin states:

12 "There are two distinct separate issues involved when implementing the CAPM.
13 First, given the validity of the standard CAPM, what is the best proxy for
14 expected beta? Second, and more fundamentally, does the standard form of the
15 CAPM provide the best explanation of the risk-return relationship observed on
16 capital markets?"
17

18 Regarding the standard CAPM, Dr. Morin states:

19 "There have been countless empirical tests of the CAPM to determine to what
20 extent security returns and betas are related in the manner predicted by the
21 CAPM. The results of the tests support the idea that beta is related to security
22 returns, that the risk-return tradeoff is positive, and that the relationship is linear.
23 The contradictory finding is that the risk-return tradeoff is not as steeply sloped
24 as the predicted CAPM. That is, low-beta securities earn returns somewhat
25 higher than the CAPM would predict, and high-beta securities earn less than
26 predicted. This is one of the most well-know results in finance. A CAPM-based
27 estimate of cost of capital underestimates the return required from low-beta
28 securities and overstates the return from high-beta securities, based on the
29 empirical evidence. The empirical form of the CAPM refines the standard form
30 of the CAPM to account for this phenomenon.
31

32 Thus, I do not share the view that the ECAPM is equivalent to a beta adjustment.
33 For utility stocks with betas less than one, the CAPM understates the return. The
34 ECAPM allows for the CAPM's inherent bias by ascribing a higher intercept and
35 flatter slope to the CAPM. The ECAPM is a return (Y-axis, vertical axis)
36 adjustment. It is not a beta risk (X-axis, horizontal) adjustment. The ECAPM is

⁷ Id., p. 382.

1 not an attempt to increase the beta estimate, which would be a horizontal x-axis
2 adjustment. The ECAPM is a return adjustment rather than a risk adjustment.”
3 (emphasis added.)
4

5 As indicated previously, Dr. Morin is a well-known finance professor and
6 textbook author, specializing in regulatory finance. He also indicates in his
7 correspondence with Mr. Hanley that there “is a huge financial literature which supports
8 both the use of the ECAPM and the use of adjusted betas.”

9 Moreover, regulatory support for the ECAPM can be found in the New York
10 Public Service Commission’s Generic Financing Docket, Case 91-M-0509.

11 In view of the foregoing, Mr. McNally’s assertion that by using adjusted betas in
12 my ECAPM, I have “already effectively transformed” my CAPM into an empirical
13 CAPM. (page 35, lines 682 –684 of ICC Staff Exhibit 7.0R) is incorrect, without merit
14 and unsupported by the underlying research. Hence, my use of Value Line adjusted betas
15 in the ECAPM does not result in an overstated estimate of the cost of common equity.
16 Rather, the use of the traditional CAPM results in an understated estimate of the cost of
17 common equity capital for a utility with an adjusted beta below 1.00. Therefore, my
18 CAPM analysis, which includes both the traditional CAPM and the ECAPM, is a
19 conservative approach resulting in a reasonable estimate of the cost of common equity.

20 **E. Risk Premium Model**

21 **Q. Mr. McNally asserts your use of historical data is inappropriate for use in your**
22 **RPM analysis (page 38, line 731, ICC Staff Exhibit 7.0R). Please comment.**

23 A. Again, as discussed previously, the use of historical data is entirely appropriate for cost of
24 capital purposes as the arithmetic mean return over a long period of time is the best
25 estimate of the next expected value for the total return on common stocks. Furthermore,
26 as discussed in CIWC Exhibit No. 7, at page 35, line 35 through page 36, line 17, use of
27 the arithmetic mean provides insight into the variance and standard deviations of returns.

1 This is particularly important as ex-post (historical) total returns and equity risk premia
2 differ in size and direction over time. Absent the valuable insight of the prospect for
3 variance, and hence, risk, provided by the arithmetic mean, investors cannot
4 meaningfully evaluate prospective risk. Thus, the use of long-term historical data to
5 develop the total market return and resultant equity risk premium is entirely appropriate
6 for use in the RPM.

7 **Q. On page 38, lines 733 – 736 of ICC Staff Exhibit 7.0R, Mr. McNally asserts that**
8 **your beta adjusted approach to the RPM is a CAPM derivation. Please comment.**

9 A. Mr. McNally is again incorrect. The RPM and CAPM are two distinct models as
10 discussed in CIWC Exhibit No. 7, at pages 31, line 18 through page 32, line 4 wherein it
11 states the following:

12 While there are some similarities, there is a very significant distinction between
13 the two models. The RPM and CAPM both add a "risk premium" to an interest
14 rate. However, the beta approach to the determination of an equity risk premium
15 in the RPM should not be confused with the CAPM. Beta is a measure of
16 systematic, or market, risk, a relatively small percentage of total risk, i.e., the
17 sum of both non-diversifiable systematic and diversifiable unsystematic risk.
18 Unsystematic risk is fully captured in the RPM through the use of the prospective
19 long-term bond yield as can be verified by reference to pages 3 through 9 of
20 Exhibit No. 7, Schedule 2, which confirm that the bond rating process involves
21 an assessment of all business and financial risks. In contrast, the use of a risk-
22 free rate of return in the CAPM does not, and by definition can not, reflect a
23 company's specific, i.e., unsystematic risk. Consequently, a much larger portion
24 of the total common equity cost rate is reflected in the company-specific bond
25 yield (a product of the bond rating) than is reflected in the risk-free rate in the
26 CAPM, or indeed even by the dividend yield employed in the DCF model.
27 Moreover, the financial literature recognizes the RPM and CAPM as two
28 separate and distinct cost of common equity models as discussed previously.
29

30 As indicated above, the financial literature recognizes the RPM and CAPM as
31 two distinct cost of common equity models. Schedule 7 presents the Table of Contents
32 from Regulatory Finance – Utilities' Cost of Capital, by the previously mentioned Dr.
33 Morin. It is clear from the Table of Contents that the RPM and CAPM are two separate
34 and distinct models since Dr. Morin devotes a separate chapter to each model.

Moreover, Dr. Morin also indicates that it is entirely appropriate to adjust the market equity risk premium by beta for use in the RPM when he states:

“The risk premium estimate derived from a composite market index must be adjusted for any risk differences between the equity market index employed in deriving the risk premium and a specified utility common stock. Several methods can be used to effect the proper risk adjustment.

First, the beta risk measure for the subject utility or the beta of a group of equivalent risk companies can serve as an adjustment device. The market risk premium RP_M , is multiplied by the beta of the utility, β_I , to find the utility’s own risk premium, RP_I :

$$RP_I = \beta_I RP_M$$

and the beta-adjusted risk premium is added to the bond yield to arrive at the utility’s own cost of equity capital.”⁸

Q. Mr. McNally also asserts that you have applied market risk premium-based betas to a non-market risk premium (page 39, line 744 through page 40, line 764 of ICC Staff Exhibit 7.0R). Please comment.

A. First, Mr. McNally states at lines 744-747 on page 39 of ICC Exhibit No. 7.0R that Value Line betas are “developed by regressing each company’s excess returns over the risk-free rate . . . against the excess returns of the market over the risk-free rate.” Again, Mr. McNally is incorrect. As previously discussed and clearly indicated on Schedule 1 of CIWC Exhibit No. 7 accompanying this testimony, Value Line betas are not calculated using excess returns, rather they are calculated using price relatives, i.e., price changes.

Second, Mr. McNally states that “[b]eta measures relative market risk and cannot be assumed to accurately measure any other type of risk.” (lines 740 – 750, page 39, ICC Staff Exhibit 7.0R). Mr. McNally is entirely correct. As previously stated in both this and my direct testimony, beta is a measure of systematic, or market, risk which is a relatively small percentage of total risk. However, company specific, unsystematic, non-

⁸ Roger A. Morin, Regulatory Finance – Utilities’ Cost of Capital, Public Utilities Reports, 1994, p. 283.

1 market, risk is fully captured in the RPM through the use of a prospective company
2 specific long-term bond yield. In contrast, the use of a risk-free rate of return in the
3 CAPM does not, and by definition can not, reflect unsystematic, non-market, company-
4 specific risk. Consequently, the RPM dose not overestimate the common equity cost rate
5 for all companies with betas less than one. Rather it is the CAPM underestimates the
6 common equity cost rate for all companies with adjusted betas less than 1.00 because it
7 does not capture unsystematic, non-diversifiable, company-specific risk. For this reason,
8 and because no cost of common equity model is inherently precise, it is imperative,
9 logical, and consistent with the EMH, that rate of return analysts employ multiple cost of
10 common equity models in an attempt to emulate investor behavior.

11 **Q. At page 40, line 768 through page 41, line 794 of ICC Staff Exhibit 7.0R, Mr.**
12 **McNally comments upon your use of historical and projected bond yields in your**
13 **application of the RPM. Please comment.**

14 A. Mr. McNally's algebraic manipulations of my application of the RPM needlessly
15 complicate the model and demonstrate Mr. McNally's misunderstanding of it. The 8.3%
16 yield referenced on page 41, line 786 is the prospective yield on A rated public utility
17 bonds. The 5.9% yield referenced on the same line is the historical, long-term yield on
18 corporate bonds used to derive the arithmetic mean market equity risk premium. The
19 7.7% yield referenced on line 787 is the prospective yield on corporate bonds used to
20 derive the forecasted market equity risk premium. Hence, R_{A2} should be 6.8%, the
21 average of 5.9% and 7.7%, the historical and prospective yield on corporate bonds. The
22 financial literature is consistent that when estimating equity risk premia, the market
23 returns and the bond yields employed should cover the same time period. Hence, it is a
24 mismatch to derive an historical equity risk premium by using a forecasted bond yield or
25 even an average of the forecasted and historical bond yield. Mr. McNally's algebraic

1 manipulations thus obfuscate the simplicity of the model and are in direct violation of the
2 financial literature on equity risk premia estimation.

3 Again, what, we, as rate of return analysts are attempting to do is to emulate
4 investor behavior. All the components we use in the application of cost of common
5 equity models are but proxies for investor expectations. Financial theory is just that –
6 theory. Any theory, financial or otherwise, is only as good as the assumptions which
7 underlie it and how well they comport with reality. Hence, when one applies theoretical
8 models such as the DCF, RPM, CAPM or CEM, using real world observations / data one
9 is using proxies for the theoretical components of the models. It is precisely because we
10 use proxies for investor expectations that no model is so inherently precise that it should
11 be relied upon exclusively in a cost of common equity determination.

12 **Q. Please discuss Mr. McNally's assertion that the equity risk premium developed**
13 **based upon the holding period returns of public utility stocks “was improperly**
14 **derived.” (page 41, line 797 through page 42, line 821).**

15 A. First, I did not “select” the time period of 1928-1999 for the estimation of the equity risk
16 premium. S&P Utility Index data only exist beginning in 1928. Therefore, the 1928-
17 1999 period represents all the years for which data were available. Previously discussed,
18 it is appropriate to use long-term historical data in a cost of common equity determination
19 because while specific historical events may not be repeated in the future, the event-types
20 and their effects will be.

21 Second, an overstatement of 20 basis points, i.e., the difference between 4.6%
22 and 4.4%, is irrelevant to both the final results of my application of the RPM and my
23 final recommendation of common equity cost rate applicable to CIWC. A 4.4% equity
24 risk premium results in a slightly lower, by 10 basis points, RPM result, with no change
25 to my conclusion of common equity cost rate of 11.85% for CIWC and no change to my

1 conclusion that the Company's requested return rate on common equity of 11.00% is
2 conservatively reasonable.

3 Third, while it is true that my second equity risk premium derivation is based
4 upon the S&P Public Utility Index, by adjusting the resulting equity risk premium based
5 upon the Index to reflect the yields on A rated public utility bonds, the equity risk
6 premium is applicable to the proxy group of six water companies which was selected
7 based upon similar, albeit less, risk to CIWC. And, since, the proxy group of six water
8 companies is less risky than CIWC, as demonstrated throughout both my direct and
9 rebuttal testimonies, as well as Mr. McNally's assertion that utilities with A rated bonds,
10 such as the proxy companies, are less risky than CIWC, the equity risk premium based
11 upon the holding period returns of the S&P Public Utility Index understates the equity
12 risk premium applicable to CIWC.

13 **F. Comparable Earnings Model**

14 **Q. Mr. McNally describes the "shortcomings" of your CEM analysis on page 42, line**
15 **825 through page 44, line 866 of ICC Staff Exhibit 7.0R. Please comment.**

16 **A.** Mr. McNally criticizes my use of historical data despite an absence of evidence contrary
17 to my assumption that investors utilizes all data, historical and projected, available to
18 them, consistent with the EMH, particularly as to water utilities for the reasons discussed
19 previously.

20 Second, different accounting practices (line 826, page 42 through line 835, page
21 43) also affect the growth rate component, projected or historical, of the DCF model.
22 Moreover, because the criteria used to select the non-utility companies in my application
23 of the CEM are based upon total risk, i.e., the sum of non-diversifiable, market, risk and
24 diversifiable, non-market or company-specific, risk, all impacts of accounting differences
25 have been obviated. Hence, accounting differences between the different industries are
26 irrelevant.

1 Third, because the selection of non-price regulated firms of comparable risk is
2 based upon statistics derived from the market prices paid by investors my application of
3 the CEM is market based. And since the rates set in this proceeding will be applied to the
4 original, depreciated cost, or book, rate base of CIWC, it is reasonable to assume that a
5 combination of realized and expected returns on book value are an appropriate estimate
6 for investor required returns on book value (page 43, lines 835 – 839). As stated in
7 CIWC Exhibit No. 7, my direct testimony, at page 44, lines 6 – 9:

8 “The CEM is designed to measure the returns expected to be earned on the book
9 common equity, in this case net worth, of similar risk enterprises. Thus, it
10 provides a direct measure of return, since it translates into practice the
11 competitive principle upon which regulation rests.”
12

13 In other words, the CEM is based upon the fundamental economic principle of
14 opportunity cost where the true cost of an investment is equal to the cost of the best
15 available alternative use of the funds to be invested, consistent with the fundamental
16 regulatory principle that regulation is intended to act as a surrogate for competition and to
17 provide a fair rate of return to investors. Thus, the CEM is consistent with the
18 “corresponding risk” standard established in the landmark cases of the U.S. Supreme
19 Court, namely the Hope⁹ and Bluefield¹⁰ cases upon which rate base / rate of return
20 regulation rests. As stated in Bluefield in 1922:

21 “A public utility is entitled to such rates as will permit it to earn a return . . . on
22 investments in other business undertakings which are attended by corresponding
23 risks and uncertainties . . . “
24

25 In addition, the U.S. Supreme Court stated in Hope in 1944:

26
27 “By that standard the return to the equity owner should be commensurate with
28 returns on investments in other enterprises having corresponding risks.”
29

30 Thus, my application of the CEM does not incorrectly imply that the rate of
31 return on book common equity is equivalent to current investor-required rates of return,

⁹ Federal Power Commission v. Hope Natural Gas Co., 320 U.S. 591 (1944).

1 presumably on market price. (page 44, line 855-856, ICC Staff Exhibit 7.0R).
2 Interestingly, this is precisely the implication of applying a market data derived common
3 equity cost rate, such as that derived using the DCF, to a book value rate base, especially
4 when market to book ratios differ significantly from one. Mr. McNally is indeed correct
5 that there is “no basis for that implication since the accounting return that the comparable
6 earnings method measures may be more or less than the return investors require from an
7 investment.” (page 44, lines 857-859, ICC Staff Exhibit 7.0R) This is precisely why
8 applying a DCF based common equity cost rate range, such as Mr. McNally's
9 recommended range of common equity cost rate of 9.90% to 10.40% to CIWC's book
10 value rate base will understate the investors true required rate of return since market to
11 book values are currently well in excess of one as is discussed in CIWC Exhibit No. 7 at
12 page 20, line 13 through page 23, line 16 and illustrated in Schedule 8 of Exhibit No.
13 7.0R

14 Fourth, at page 43, lines 839 – 842, Mr. McNally claims that my two non-utility
15 proxy groups are riskier than the proxy groups of utilities they represent. He cites the
16 difference in the average beta of the proxy group of six water companies of 0.53 relative
17 to the average beta of the comparable non-utility proxy group of 0.64, an 11 basis points
18 difference. Likewise, he cites the difference in the average beta of the proxy group of
19 comparable utilities of 0.57 relative to the average beta of the comparable non-utility
20 proxy group of 0.67, a 10 basis points difference. Schedule 8 of Exhibit No. 7
21 accompanying this testimony shows the current Value Line adjusted betas for the
22 companies covered by Value Line (Standard Edition) in both of Mr. McNally's
23 comparable samples. As can be gleaned from Schedule 8, American States Water Co.
24 has a beta of 0.65 and American Water Works Co., Inc. has a beta of 0.55, a 10 basis
25 points difference. Using Mr. McNally's logic, these companies should not be part of the

¹⁰

Bluefield Water Works Improvement Co. v. Public Serv. Comm'n, 262 U.S. 679 (1922).

1 same sample group because they are not of similar risk. As can also be gleaned from
2 Schedule 8, Constellation Energy Corp. has a beta of 0.50, while Kansas City Power and
3 Light Co. has a beta of 0.60, again, a 10 basis points difference. And, likewise, based
4 upon Mr. McNally's logic, the two companies are not of similar risk. Yet, curiously, Mr.
5 McNally's comparable sample companies were selected for inclusion in the sample
6 because of similar, albeit unnamed, risk factors. Since both of my proxy groups of non-
7 utility companies were selected based upon criteria of similar risk to either the water
8 company group of the comparable utility group, the companies comprising the proxy
9 groups of non-utility companies are indeed of similar risk.

10 **G. Size Based Risk Premium**

11 **Q. On page 45, lines 873-875 of ICC Staff Exhibit 7.0R, Mr. McNally states that if any**
12 **size based risk premium were to be added to a common equity cost rate applicable**
13 **to CIWC it should be based upon the size of PSC, CIWC's parent. Please comment.**

14 **A.** Mr. McNally is incorrect because he ignores a basic financial precept, i. e., the risk rate
15 (return rate) is related to the asset in which capital is invested. Under the rate base / rate
16 of return paradigm, it is the rate base of the regulated entity to which a rate of return set
17 in a regulatory proceeding will be applied. In short, it is CIWC's rate base, and the risk
18 of investing therein which is 'the asset' for which the rate of return (and risk) must be
19 compatible. This means that the rates set in the instant docket will be applied to CIWC's
20 rate base and CIWC's rate base alone. Therefore, it is the risk to which investment in this
21 rate base, and no other, is relevant. The relationship of the regulated company and its
22 parent company is irrelevant. Only the riskiness of the regulated company's rate base is
23 relevant in determining an appropriate rate of return for the Company. The identity of the
24 owner(s) of the stock in question is irrelevant. For example, if I own stock in XYZ
25 Company, my required rate of return on my investment in XYZ is based upon the
26 riskiness of XYZ and my preference for risk - nothing else. If I sell my stock in XYZ to

1 Mr. McNally, for instance, his required rate of return on his investment in XYZ will be
2 based upon the riskiness of XYZ and his preference for risk. However, this transfer of
3 ownership from myself to Mr. McNally would change nothing regarding XYZ's inherent
4 riskiness upon which the required rates of return must be XYZ is based. Likewise,
5 CIWC's ownership by PSC, through Consumers Water Company, changes nothing about
6 the riskiness of CIWC and its rate base. As a result of the acquisition of Consumers
7 Water by PSC, there has been no change in CIWC's number of customers, customer mix,
8 day-to-day operating environment, size, or capital needs, and therefore, no change in its
9 inherent risk. Consequently, it is not appropriate to base a size premium applicable to
10 CIWC upon the size of PSC.

11 **Q. On page 45, lines 877-890 of ICC Staff Exhibit 7.0R, Mr. McNally gives several**
12 **reasons why a size based risk premium should be based upon PSC. Please address**
13 **them.**

14 A. First, at lines 880-882 on page 45, Mr. McNally claims that "[b]eing a part of a much
15 larger organization should enhance the ability of CIWC to access the market on
16 reasonable terms." Yet, he has provided no evidence that the capital attraction position of
17 CIWC has been enhanced by PSC ownership of CIWC. In fact, the Company informs
18 me that in negotiations with potential lenders, there is no interest in the relationship
19 between the Company and PSC, but rather an interest in the ability of CIWC and CIWC
20 alone to service any additional debt.

21 Second, at lines 882-884, page 45 of ICC Staff Exhibit 7.0R, Mr. McNally states
22 that "reductions in costs resulting from efficiencies should be passed on to customers in
23 the form of lower rates." The statement is true, but such cost reductions will be reflected
24 in the operating expenses component of the revenue requirement. Hence, ratepayers will
25 not be "denied the benefits associated with the combined entity's stronger financial
26 profile." (lines 889-890, page 45).

1 It is clear, then, CIWC stands alone in the fixed capital markets and any
2 reduction in PSC's cost of capital because of the acquisition is irrelevant to CIWC's
3 investment risk and hence, the risk of the rate base to which rates set in this proceeding
4 will be applied. Furthermore, the opportunity cost principle means that a prudent,
5 rational investor, including a parent company, will look elsewhere to invest his / her
6 money unless the riskiness inherent in the asset, i.e., CIWC's rate base is justly and fairly
7 compensated regardless of who owns the asset or how many investors there are.
8

9 **Q. On page 46, line 1 through page 50, line 988, Mr. McNally discusses the lack of a**
10 **theoretical basis for a size based risk premium. Please comment**

11 A. A "theoretical" basis is not necessary in the face of common sense and empirical
12 evidence. The phenomenon of the effects of size on risk is directly observable in the
13 marketplace. Schedule 9 is the excerpt from Eugene F. Brigham's book, Fundamentals
14 of Financial Management, 5th Ed., cited on page 12 of CIWC Exhibit No. 7, my direct
15 testimony. It is clear from Schedule 9 that many of the factors discussed by Mr. McNally
16 at page 46, lines 896-904 of ICC Staff Exhibit No. 7.0R, i.e., lack of liquidity and
17 transaction costs, increase the riskiness of small firms. In fact, in my opinion, these
18 possibly are very good "theoretical", but certainly common sense, reasons for the greater
19 risk occasioned by small size. Moreover, the fact that Dr. Brigham does not specifically
20 refer to utilities (page 46, line 913 through page 47, line 1) is irrelevant. Financial theory
21 is applicable across the broad spectrum of firms and not limited to any particular industry
22 or industries. Schedule 10, is an excerpt from Ibbotson Assoc. Valuation Edition – 2000
23 Yearbook regarding Firm Size and Return. On page 133 they state:

24 "One question regularly raised concerning the size premium is whether it is
25 relevant for specific industries. In the past there has been no concrete evidence
26 to counter the contention that a size effect exists for the economy as a whole but
27 may not be relevant to a specific industry. The problem of supporting a size

premium for a specific industry has been made difficult by a lack of data for companies in individual industries.

* * *

We have attempted to answer this question by performing an industry-specific size effect study. . . . The results of the study can be found in table 5-11. Note that almost all industries exhibit returns where small company stocks outperform large company stocks over extended period.”

The two digit SIC (Standard Industrial Classification) code for utilities is 49.

Table 5-11 on page 137 of Ibbotson Assoc. Valuation Edition – 2000 Yearbook, clearly indicates that the small size premium is applicable to utilities.

It is also true that the Ibbotson Assoc. study is based upon the stocks in the New York Stock Exchange (NYSE). In fact, the majority of the utilities in Mr. McNally's two sample groups are listed on the NYSE, including PSC, CIWC's parent company as shown on Schedule 5.

In view of the foregoing, the basis of my size-based risk premium is not questionable. If it is questionable, it is only questionable in terms of magnitude for while the Ibbotson Assoc. study indicates that an appropriate small size risk premium for Micro-cap stocks, with an average market capitalization of \$97.0 million, still somewhat larger than CIWC's estimated market capitalization of \$82.1 million, is 2.21% or 221 basis points, my adjustment for CIWC's small size was a modest and very conservative 0.20%, or 20 basis points.

Q. On page 50, at lines 980-982, Mr. McNally states that my “application of a size-based risk premium, on the basis of Ibbotson Associates’ historical size-based risk premiums, is probably inconsistent with the manner in which Ibbotson Associates measured the historical size-based risk premiums.” Please comment.

A. Once again, Mr. McNally is incorrect. Ibbotson Assoc.'s size-based risk premia are based upon an analysis using adjusted betas. Footnote 3 of page 118 of Ibbotson

1 Assoc.'s Valuation Edition – 2000 Yearbook (see Schedule 10 of Exhibit No. 7.0R)
2 describes how Ibbotson Assoc. calculated the betas it used in its size-based risk premia
3 analysis. Footnote 3 also refers to Chapter 4 of the Valuation Edition – 2000 Yearbook
4 for “more detail on beta estimation.” Chapter 4 clearly states that the betas which
5 Ibbotson Associates use in their various studies are adjusted betas. Hence, my
6 application of a size-based risk premium is not inconsistent with Ibbotson Associates’
7 historical size-based risk premia, except to the extent that it is extremely conservative.
8

9 **Q. On page 50, line 991 through page 51, line 1023 of ICC Staff Exhibit 7.0R, Mr.**
10 **McNally states that it is not appropriate to apply a size-based risk premium to a**
11 **composite cost of common equity, based upon the DCF, RPM, CAPM and CEM.**
12 **Please comment.**

13 A. First, Mr. McNally is correct when he states on page 50, lines 997-999 that a size-based
14 risk premium would be reflected in the stock price parameter of a DCF analysis.
15 However, in the instant docket, since the common stock of CIWC is not traded, both Mr.
16 McNally and myself must look to proxy companies whose common stock is traded for
17 insight into a cost of common equity applicable to CIWC. The size of the companies in
18 Mr. McNally's two sample groups is reflected in their market prices and hence, in their
19 DCF derived cost rates of common equity. But, as demonstrated previously in this
20 testimony and on Schedule 5, the average book capitalization of Mr. McNally's two
21 sample groups at June 30, 2000 was 7.3 times and 26.7 times larger than CIWC's
22 capitalization of \$82.145 million, respectively. Hence, CIWC's small size is not
23 reflected in the DCF derived common equity cost rates based upon the market data of his
24 sample group companies.

25 Second, it is appropriate to apply a size-based risk premium to a CAPM derived
26 cost of common equity. Mr. McNally assumes, in error, that investors seek compensation

1 only for market risk. (page 51, lines 1010-1012) That is only true in the context of a
2 portfolio of securities. However, in the instant docket the goal is to establish the cost of
3 common equity of a single security where non-market risk, including increased risk due
4 to small size, is extremely important to investors.

5 In view of all of the foregoing, a size-based upward risk adjustment is
6 empirically supported and appropriately applicable to small utilities, such as CIWC.

7

8 **Q. Does that conclude your testimony?**

9 A. Yes.

10